

PMA2**DEVELOPMENT OF COST-EFFECTIVE WEB-BASED OUTCOMES RESEARCH STUDIES AND DISEASE MANAGEMENT PROGRAMS**Ambegaonkar AJ, Day D

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Innovations in information technology are rapidly changing the health care market. With more and more clinical trials being conducted and managed on the web, the Internet provides an opportunity for conducting effective multi-center outcomes research studies and developing disease management programs. **OBJECTIVES:** This research describes the development of a web-driven application for ongoing collection, analysis, and reporting of outcomes research data. In addition, the web application was developed to gain experience in provision of benchmarking reports to health care providers conducting disease management programs. **METHODS:** Given current privacy regulations a multi-level security system with error checking was developed to assure integrity of data entering the system. Through integration of several programming languages (Visual Basic Script, Java Script, and HTML) into web-based active server pages, a method for immediate data collection, summary, and on-demand reporting was successfully developed. The system was deployed remotely via an Internet Service Provider. A prospective multi-site (10) hospital based infectious disease study of fungal risk and treatment patterns; and a retrospective lipid/cardiology clinic based study of patient care was conducted using the above technology. **RESULTS:** For expenditures of less than \$1,000, secure web applications were developed that provided electronic data capture of all study variables. The customizability of the program allowed for developing applications for differing disease states thereby reducing set-up costs and improving efficiency. Simultaneous multi-site training and minimal data entry errors further reduced costs. The applications also provided real-time reports that enhanced patient-care and reported practice patterns that highlighted national and regional variations. **CONCLUSIONS:** The success of these studies has demonstrated the utility of the internet in providing health care practitioners with a cost-effective tool for efficiently conducting multi-center outcomes research and disease management. Considering the increasing popularity and access to the Internet, this research has significant implications for outcomes research and disease management.

PMA3**DOES WHERE YOU LIVE AFFECT IF AND HOW YOU DISCOUNT FUTURE COSTS AND BENEFITS IN ECONOMIC EVALUATION? SHOULD IT?**Faulkner LA¹, Gafni A², O'Brien BJ¹¹Centre for Evaluation of Medicines, St Joseph's Hospital, McMaster University, Hamilton, ON, Canada; ²McMaster University, Hamilton, ON, Canada

OBJECTIVES: An accepted practice with unresolved issues in economic evaluation is the discounting of future costs and benefits. Many people conducting evaluations view discounting as a technical matter and look to guidelines for the proper rate. Therefore, we ask three questions about international guidelines: 1) what discount rate(s) are recommended; 2) do they differ for costs and health outcomes; 3) what is the underlying theory for discounting and rationale for the rate(s)? **METHODS:** We review recommendations about discounting in international guidelines according to underlying theory used to recommend discounting, suggested rates, rationale for particular rates, whether a different rate was suggested for health outcomes, and what literature was cited. **RESULTS/CONCLUSION:** Australia, Canada, and Ontario recommend discounting costs and health outcomes at 5%, the US 3%, New Zealand 10%, and the Netherlands 4%, while the UK recommends 6% for costs and 1.5% for health outcomes. Most countries recognize the controversy, yet remain unconvinced that health outcomes should be discounted at different rates. While the primary stated underlying theory for discounting is time preference, the rationale (if provided) for the particular rates recommended varies across countries. Most often, it relies on empirical estimates of government bond rates and/or notions of international consistency reflecting potentially conflicting principles. Implicit appeals to measure pure time preference also exist; however, this may not be measurable if time and health are inextricably linked. Furthermore, some health outcome measures may already include individuals' time preferences potentially leading to double discounting. Implications will be discussed.

PMA4**AN ECONOMIC PROOF AND APPLICATION THAT FORMULARY RESTRICTIONS WITHIN DRUG CLASSES ALWAYS RESULT IN HIGHER COSTS**Simons WR

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Pharmaceutical benefit providers use restrictive formularies to control health care expenditures for drugs. One type of restriction requires the use of one drug before the use of another drug within the same drug. **OBJECTIVE:** Test the hypothesis that restrictive formularies lower expenditures for pharmaceuticals. **METHOD:** We use expected utility theory to derive equations for the restrictive and unrestrictive formulary cases where the equations take into account effectiveness (i.e., the probability of attaining treatment goal and not attaining goal), alternatives if treatment fails and costs of each scenario. Administrative costs are assumed zero. We prove mathematically that restrictive formularies within drug classes always cost more. Moreover, even if all drugs in the therapeutic class are equal in effectiveness and equal in cost,